

Community GHG Survey

Los Altos Environmental Commission

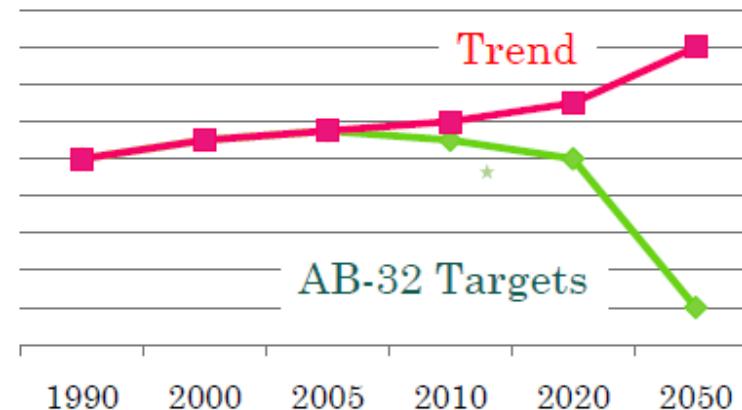
Environmental Commission Update 04/12/10

What is Driving a GHG Emissions Inventory?

- o AB-32, California's Global Warming Solutions Act of 2006
 - *"Ensure rigorous and consistent accounting of emissions"*
- o Specific Targets defined in AB32 - reduce statewide GHG emissions to . . .

- 2000 levels by 2010
- 1990 levels by 2020
- 80% below 1990 by 2050

**AB32 Scoping Plan Recommends
15% Reduction from Current by 2020**



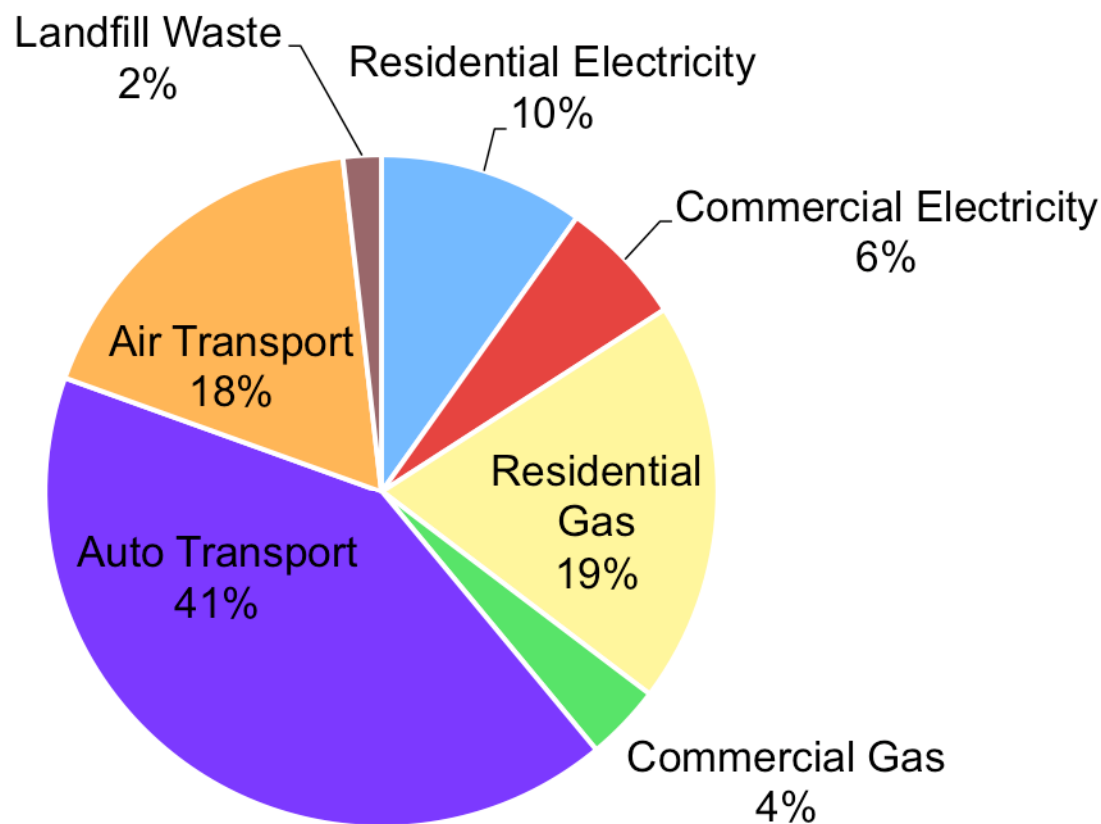
- o Many cities are now engaged in GHG inventory activity
Palo Alto, Menlo Park, Santa Clara, Santa Cruz, Woodside, San Carlos
South San Francisco, Daly City, Monte Sereno, Cupertino, Mountain View,
Redwood City, Brisbane, San Bruno, Saratoga, Hillsborough, Foster City,
Los Gatos, Half Moon Bay, Los Altos, Campbell, Milpitas, etc.

ICLEI's Recommended Process

Figure 1.1 The Five-Milestone Process



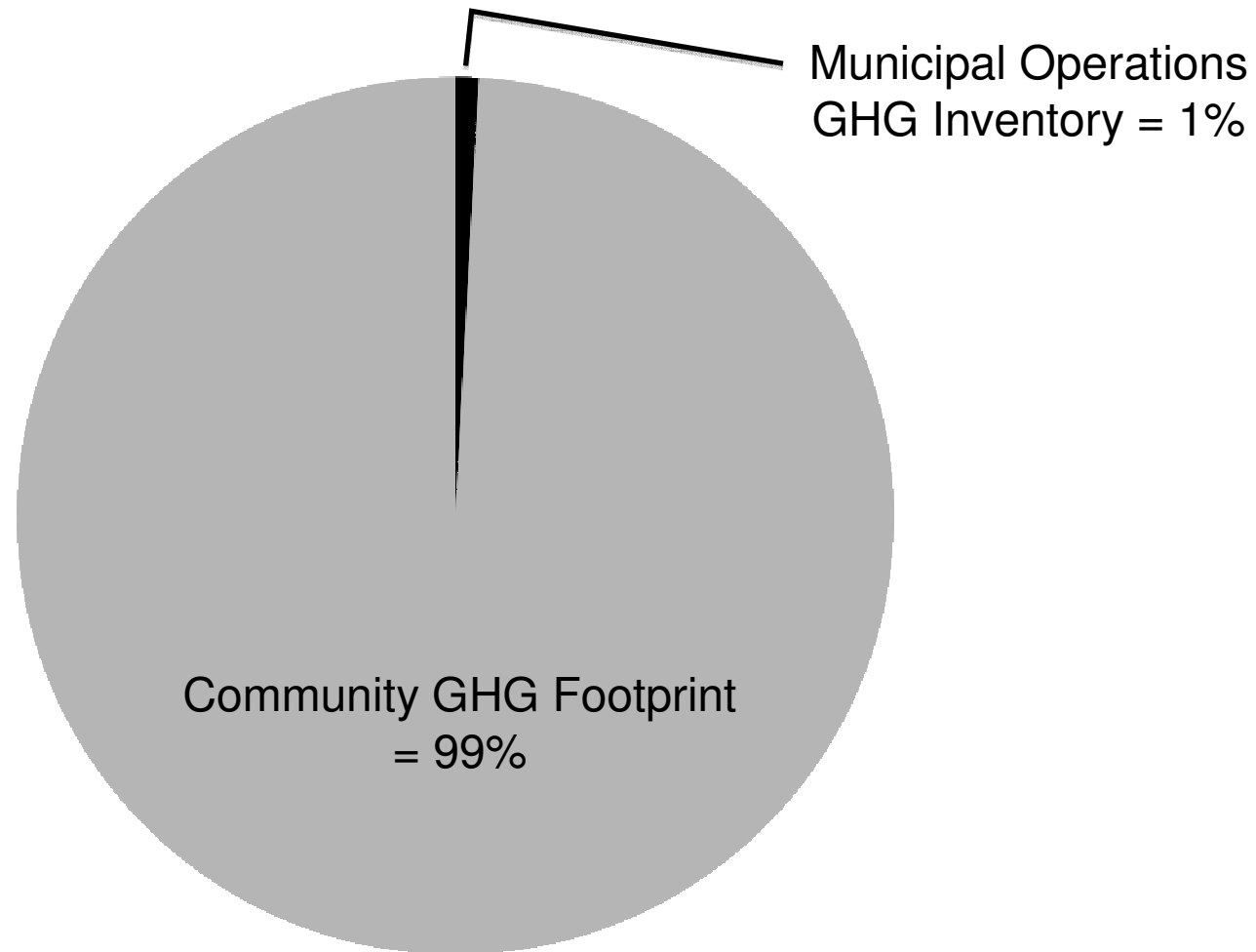
Los Altos Community GHG Inventory – Milestone #1 ICLEI Method Milestone #1



**Los Altos 2005
Community Emissions
209,440 tonnes CO₂e**

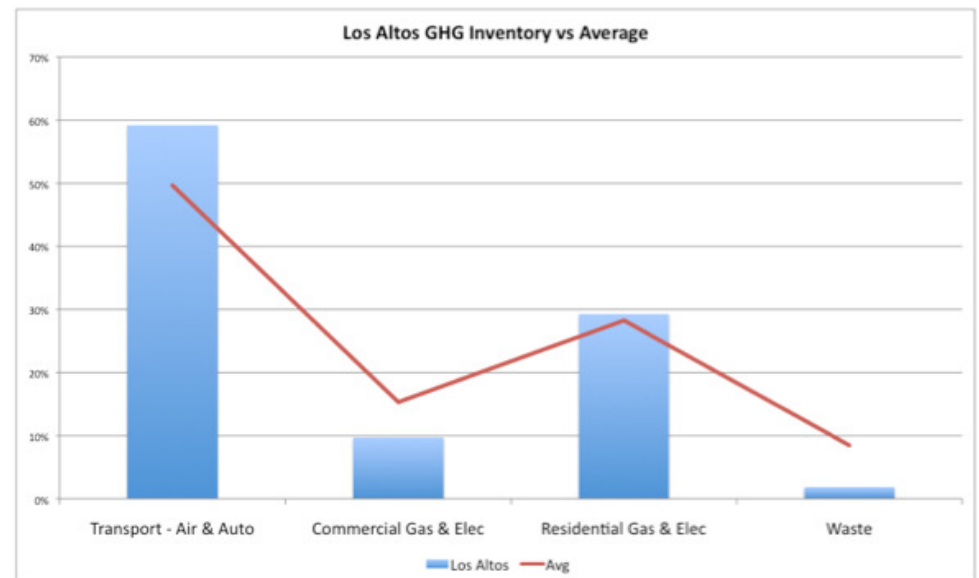
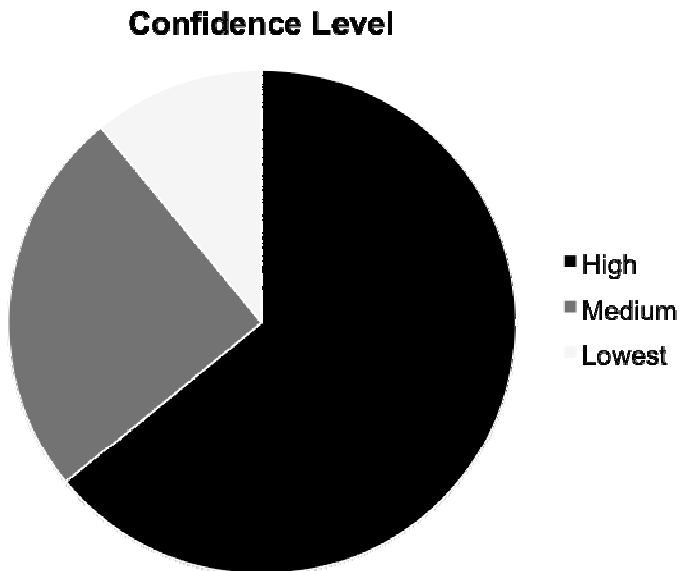
NOTE: Preliminary analysis of Los Altos energy use, travel estimates

Community GHG Footprint Dwarfs Municipal Operations Footprint



How confident are we in the current inventory?

1. ICLEI methodology is widely used and accepted.
2. High confidence levels in > 80% of data
3. Comparison with other municipal inventories passes the “reasonableness test.”



Overall Conclusions

- This represents Los Altos Community GHG inventory as accurately as possible with today's available information sources
- By far the biggest opportunity for GHG reduction is in the Community, not in municipal operations
- We are about in the middle of the pack with regard to progress on Climate Action initiatives

Recommendation

That the LA City Council formally adopt
this as Los Altos Community GHG
baseline.

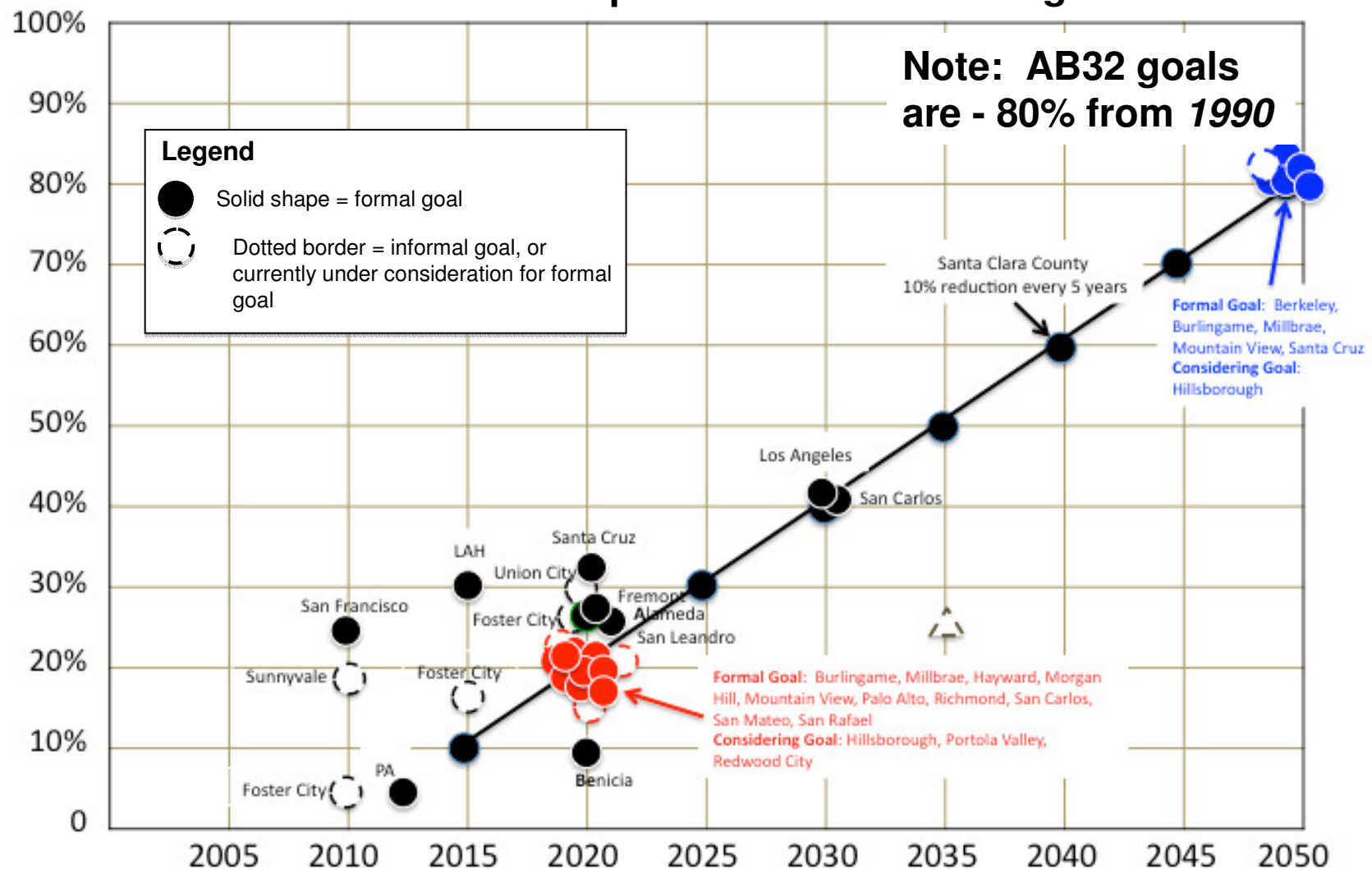
ICLEI's Recommended Process

Figure 1.1 The Five-Milestone Process



Milestone #2: Establishing a target – what have other cities done?

Current Municipal GHG Reduction Targets



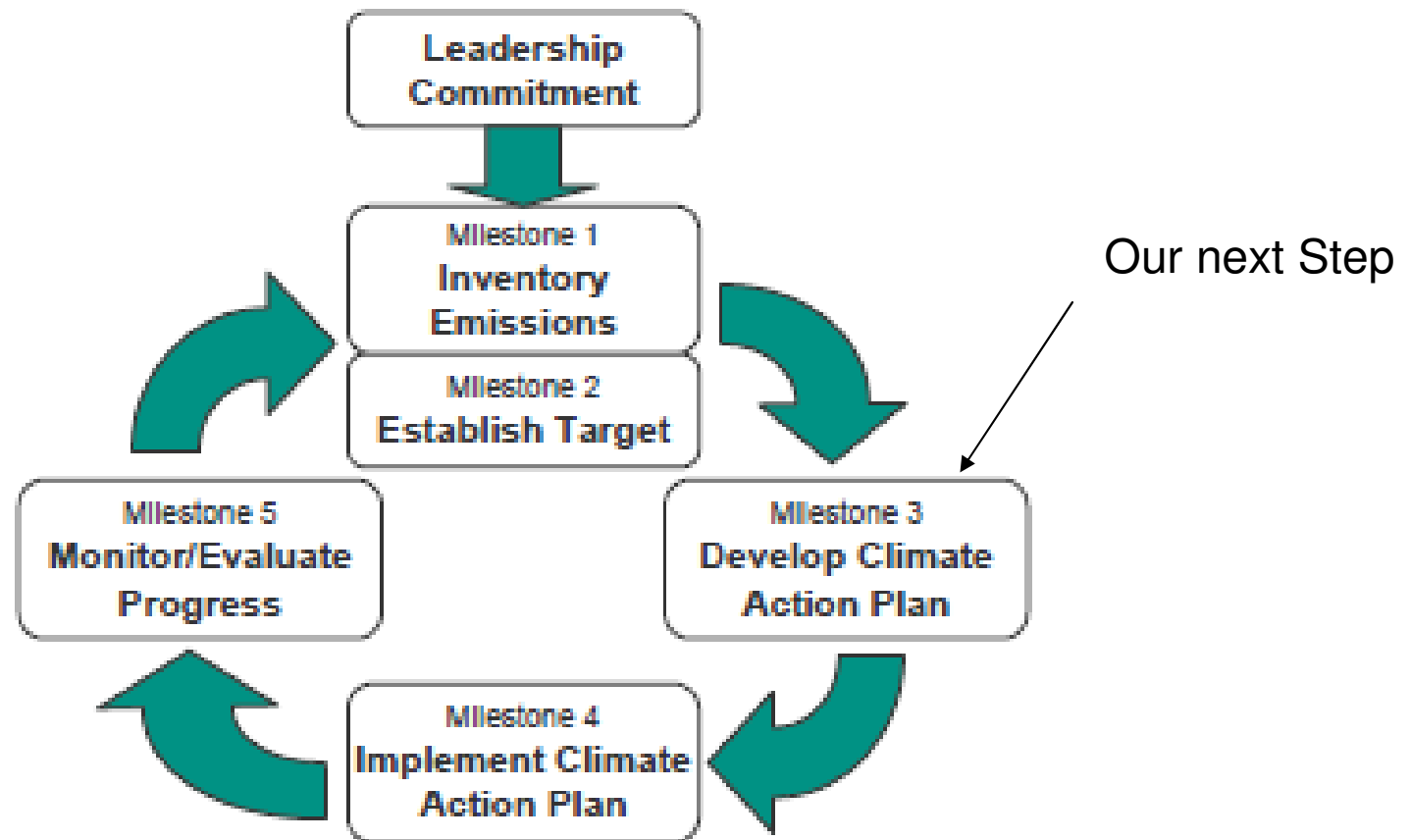
Source: Joint Venture: Silicon Valley Network

Recommendation

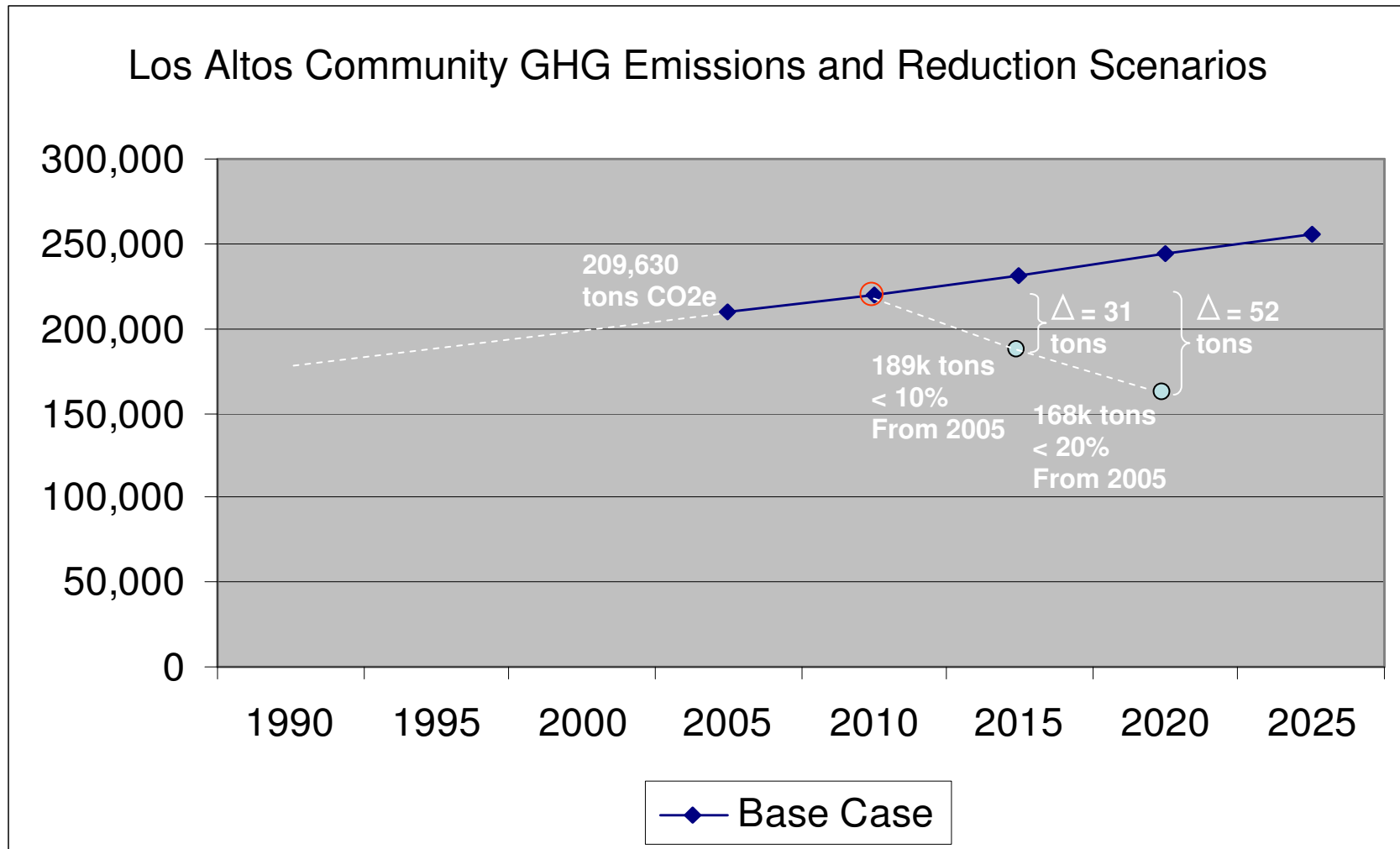
That the LA City Council task the EC and staff to recommend non-binding GHG reduction targets for both Los Altos municipal operations and the Los Altos community.

ICLEI's Recommended Process

Figure 1.1 The Five-Milestone Process



GHG Reduction Scenarios (draft)



Climate action Plan: What does it take?

Basic



More Complex

Los Altos Hills

Palo Alto: a book

Residential Electricity

- ☐ Home Audits & Educational Programs
- ☐ Continued promotion of Residential Solar PV
- ☐ Greening of Grid Electricity by PG&E
- ☐ Availability of Green Energy option by 2012

Natural Gas

- ☐ Home Audits & Educational Programs

Commercial Gas & Electric:

- ☐ Outreach to Foothill College, etc.

Residential Solid Waste:

- ☐ Switch to Green Waste 10

Full Chapters on

- ☐ Utility Programs
- ☐ Sustainable Purchasing
- ☐ Transportation and Land Use
- ☐ Green Building
- ☐ Zero Waste
- ☐ Education Strategies

Recommendation

That the LA City Council task the EC and staff to develop a Climate Action Plan for both Los Altos municipal operations and the Los Altos community.

Summary of recommendations

- That the LA City Council formally adopt this as Los Altos Community GHG baseline.
- That the LA City Council task the EC and staff to recommend non-binding GHG reduction targets for both Los Altos municipal operations and the Los Altos community.
- That the LA City Council task the EC and staff to develop a Climate Action Plan for both Los Altos municipal operations and the Los Altos community.

Backup Slides

How are GHG Inventories Calculated?

Table 2.3 Inventoried Emission Sources by Scope⁸

Scope 1	Scope 2	Scope 3
Fuel consumed to heat/cool all facilities	Purchased electricity consumed by facilities	Solid waste generated by government operations
Fuel consumed for vehicles and mobile equipment	Purchased electricity consumed by electric vehicles	Fuel consumed for employee vehicles used for commuting
Fuel consumed to generate electricity	Purchased steam for heating or cooling facilities	
Leaked refrigerants from facilities and vehicles		
Leaked/deployed fire suppressants		
Wastewater decomposition and treatment		
Solid waste in government landfills		

Some GHG Conversion Factors . . . not all kWh's are Equal!

Table 1.2.1. Common Energy Sources and CO₂ Emissions Impacts

Common fuels/Power sources	Measure	CO ₂ emissions (lbs.)
Grid electricity/NPCC New England*	1 kWh	0.91
Grid electricity/SERC South*	1 kWh	1.49
Grid electricity/WECC Rockies*	1 kWh	2.04
Grid electricity/WECC California*	1 kWh	0.88
Motor gasoline**	1 gallon	19.38
Diesel fuel No. 1 & No. 2**	1 gallon	22.33
Jet fuel (Jet A or A-1)**	1 gallon	21.05
Propane**	1 gallon	12.63
Natural gas†	1 therm	11.67

Sources: *U.S. EPA eGrid 2006 V2.1 (2004 data); **U.S. EPA Inventory of Greenhouse Gas Emissions and Sinks (2007); †Emissions Factors for Natural Gas, General Reporting Protocol, The Climate Registry 2008 V1.0.

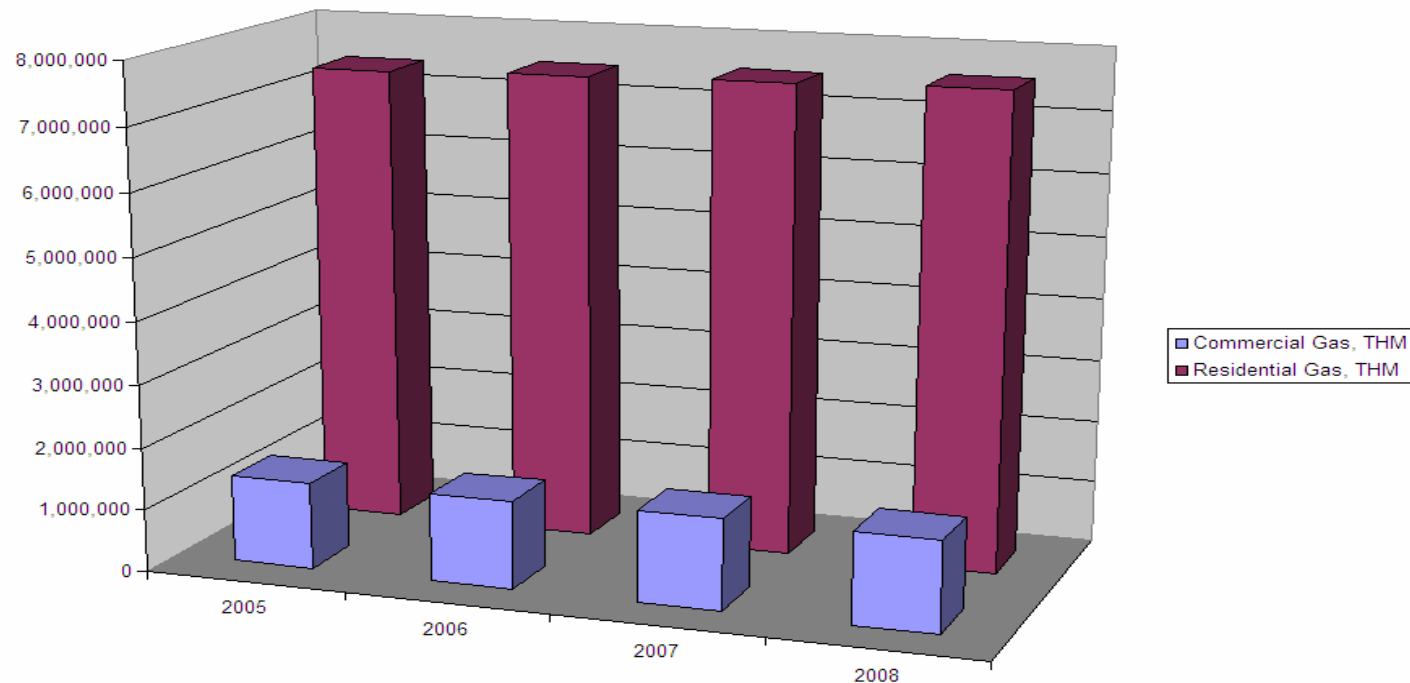
Los Altos Community Inventory Approach

- o Community inventory generally less detailed and time consuming than municipal inventory
- o Different cities have put varying levels of effort into auto/air estimates; standard estimates exist based on population numbers
 - LAH used estimates
 - PA used data from survey results conducted by PA 'GRCC'
- o Key data points for community inventory
 - electricity and gas use – obtained information from PG&E
 - solid waste
 - auto transportation
 - other|
- o Develop initial community inventory using standard ICLEI approach and 'cook book'
- o After initial inventory is complete, EC will present the findings, and seek possible community input on more detailed transportation numbers for a future update, date TBD.

Data on Community Energy Use, 2005 - 2008

Los Altos Residential and Commercial Energy Usage, 2005-2008				
	2005	2006	2007	2008
Commercial Electricity, Kwh	56,594,701	58,657,196	60,946,008	60,605,314
Residential Electricity, Kwh	92,370,758	94,498,691	93,768,034	94,953,068
Commercial Gas, THM	1,392,592	1,414,741	1,468,634	1,458,772
Residential Gas, THM	7,386,122	7,458,906	7,507,876	7,581,962

Los Altos Residential and Commercial Gas Use 2005 - 2008



Auto Transportation Data using ICLEI Method

COUNTY	JURISDICTION	MAINTAINED MILES			DAILY VEHICLE MILES OF TRAVEL (DVMT) [1,000]		
		RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL
SANTA CLARA							
CITIES:	CAMPBELL	0.00	88.52	88.52	0.00	549.53	549.53
	CUPERTINO	0.00	122.07	122.07	0.00	551.37	551.37
	GILROY	3.96	78.86	82.82	1.39	270.19	271.57
	LOS ALTOS	0.00	111.17	111.17	0.00	362.02	362.02
	LOS ALTOS HILLS	0.00	47.74	47.74	0.00	95.98	95.98
	LOS GATOS	0.93	110.54	111.47	0.33	440.76	441.09
	MILPITAS	0.00	127.91	127.91	0.00	520.46	520.46
	MONTE SERENO	0.00	12.60	12.60	0.00	29.68	29.68
	MORGAN HILL	0.00	100.88	100.88	0.00	332.89	332.89
	MOUNTAIN VIEW	0.00	141.49	141.49	0.00	760.91	760.91
	PALO ALTO	7.28	193.11	200.39	5.14	899.65	904.79
	SAN JOSE	11.96	1,932.71	1,944.67	4.19	7,986.07	7,990.25
	SANTA CLARA	0.00	227.16	227.16	0.00	1,332.84	1,332.84
	SARATOGA	0.00	146.33	146.33	0.00	371.24	371.24
	SUNNYVALE	0.00	300.53	300.53	0.00	1,355.80	1,355.80
OTHER:	ARMY CORPS OF ENGINEERS	21.00	0.00	21.00	7.35	0.00	7.35
	COUNTY (UNINCORPORATED)	392.80	291.29	684.10	363.71	2,890.00	3,253.71
	DEPARTMENT OF DEFENSE	0.00	0.80	0.80	0.00	0.68	0.68
	STATE HIGHWAY	81.68	182.79	264.47	1,988.34	19,714.13	21,702.48
	STATE PARK SERVICE	137.10	0.00	137.10	12.34	0.00	12.34
	UNIVERSITY OF CALIFORNIA	0.00	0.38	0.38	0.00	2.18	2.18
SANTA CLARA Total		656.71	4,216.87	4,873.58	2,382.78	38,466.37	40,849.15



This process may undercount for Los Altos; assuming 2 cars/household, average annual 'mileage per car' would be 8,395 (vs ~15,000)

Air Transportation Data – Estimation Method

		Los Altos Multiplier	Average US Miles Per Capita, 2005	Los Altos Per Capita	CO2 lbs/mi	Total lbs/cap	Los Altos population	Total Tonnes
Domestic Air Travel		2	1,776	3,552	0.64	2,273	29,000	29,952
International Air Travel		2	687	1,373	0.39	536	29,000	7,057

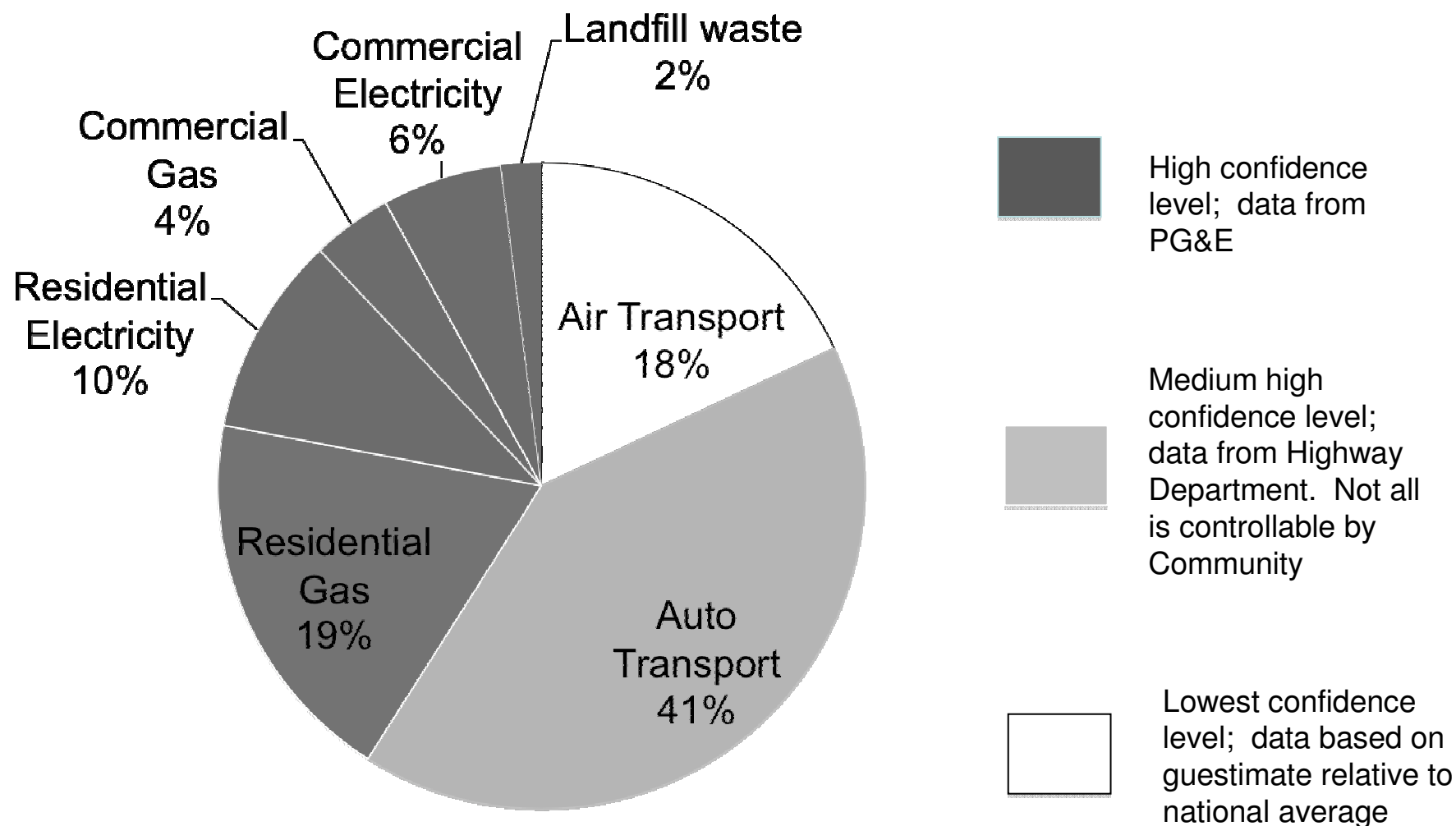
								37,009

PRELIMINARY Los Altos Community GHG Inventory – ICLEI Method

<u>Category</u>	<u>Tonnes CO2e</u>	<u>% of Total</u>
Residential Electricity	20,652	10%
Commercial Electricity	12,653	6%
Residential Gas	40,657	19%
Commercial Gas	7,666	4%
Auto Transport	86,955	42%
Air Transport	37,009	18%
Landfill Waste	3,848	2%
Total	209,440	

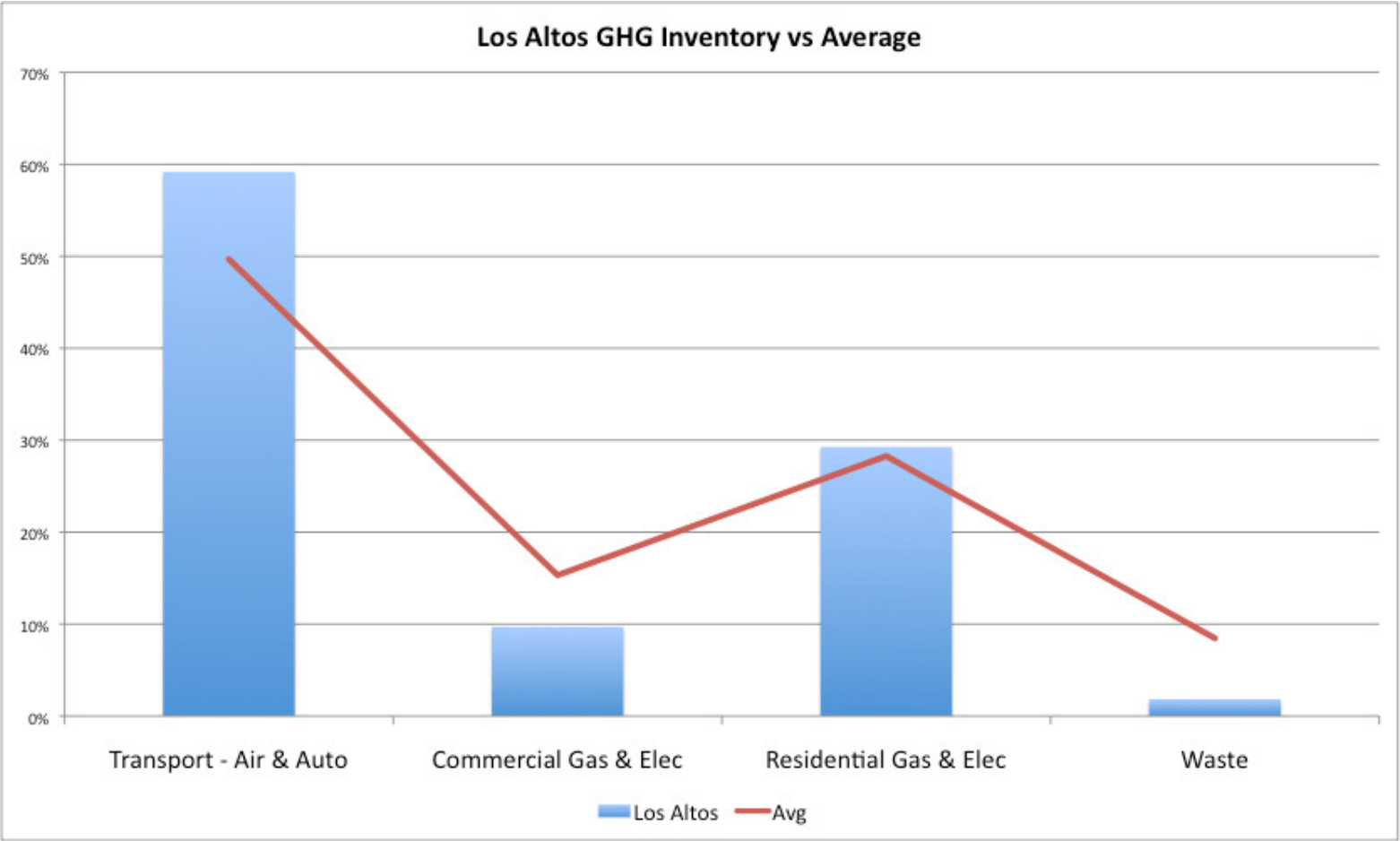
NOTE: Preliminary analysis of Los Altos energy use, travel estimates

Los Altos Community GHG Inventory – ICLEI Method



209,440 tonnes CO₂e

Comparison with other Northern California Municipalities*



* LA, LAH, Mountain View, Menlo Park, Palo Alto, Woodside, Redwood City

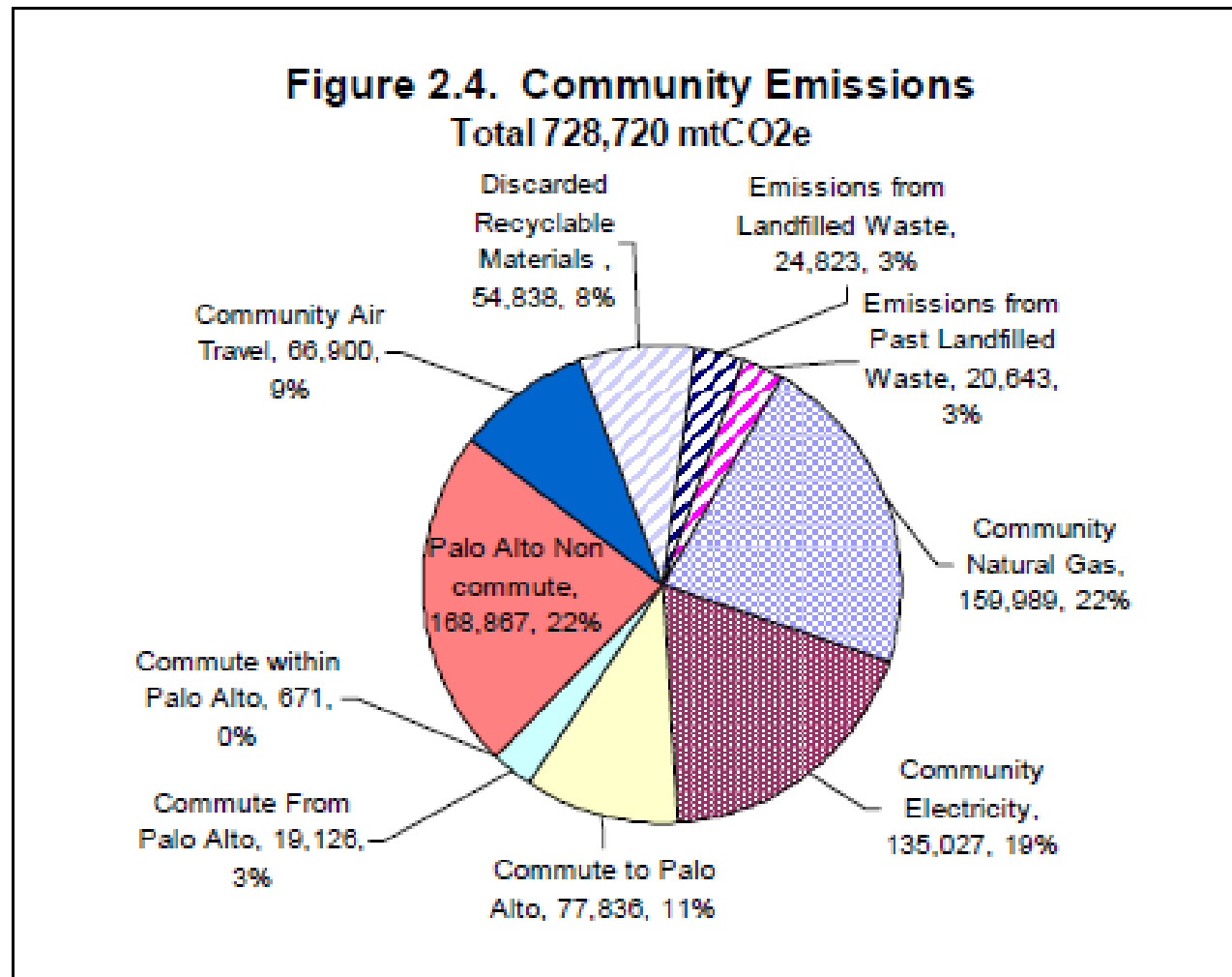
California City and County Greenhouse Gas Reduction Targets

List updated March 2010

Local	Bold - adopted goals		red border = 15% by 2020
City	Community-Wide	Government Operations	Notes *
Alameda	25% by 2020		
Benicia	10% by 2020	20% by 2010, 33% by 2020	Below 2000 levels
Berkeley	80% by 2050		
Burlingame	15% by 2020, 80% by 2050		
Campbell		15-25% by 2020	
Foster City	5% by 2010, 15% by 2015, 25% by 2020		Informal goals - not targets adopted by Council
Fremont	25% reduction by 2020		
Hayward	13-18% by 2020		
Hillsborough	15% by 2020, 80% by 2050		Task Force recommendation; decision pending
Los Altos			
Los Altos Hills	30% by 2015	40% by 2015	
Los Angeles	35% by 2030		
Millbrae	15% by 2020, 80% by 2050	15% by 2020, 80% by 2050	
Morgan Hill	15% by 2020		Below current levels
Mountain View	5% by 2012, 10% by 2015, 15-20% by 2020, 80% by 2050	15% by 2010, 20% by 2015, 25% by 2020, 80% by 2050	
Palo Alto	5% by 2012, 15% by 2020	5% by 2009, 15% by 2020	
Portola Valley	15% by 2020		AB 32 & Mayor's Climate Protection Agreement; formal goals have not yet been adopted based on the ghg inventory
Redwood City	15% by 2020	15% by 2020	Informal goals - not targets adopted by Council
Richmond	15% by 2020		
San Carlos	15% by 2020, 35% by 2030		
San Francisco	25% by 2010	25% by 2010	City and County of SF
San Jose		25% by 2012, 30% by 2015, 35% by 2020, 50% by 2030, 80% by 2045	Below 1990 levels
San Leandro	25% by 2020		
San Mateo	15% by 2020	15% by 2020	Below 2006 levels
San Rafael	15% by 2020		
Santa Clara		15% by 2020	Below 2005 levels
Santa Cruz	30% by 2020, 80% by 2050		Below 1990 levels
Sunnyvale	20% by 2010	7% by 2012	Informal goals - not targets adopted by Council
Union City	30% by 2020	30% by 2020	
County	County-Wide	Government Operations	Notes
Marin	15% by 2020	20% by 2020	Below 2000 levels
San Mateo	Flat emissions by 2010, 80% by 2050		Below current levels; Cool Counties
Santa Clara	80% by 2050, 10% reduction every 5 years	No increase by 2010, 10% reduction every 5 years, 80% reduction by 2050	Below current levels
Sonoma	20% by 2012		

* **Below 2005 levels unless otherwise stated**

Comparison Data - Palo Alto Community GHG Inventory



Source: Palo Alto Climate Protection Plan, approved December 2007; data represents 2005 baseline year emissions